Dongguan Shengyang industrial Co., Ltd.

MGI Series Inverters For Grid
User Manual

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Tel：+86-0769-85372118/85372132/85372133
Fax：+86-0769-85372122/85099281
Website：http://www.shengyangmold.com.cn
http://syindustrial.manufacturer.globalsources.com
http://shengyangindustrial.en.made-in-china.com
E-mail:shengyang@sycorp.com.cn
Address: No1 ShangXin Road,Xin Nong Cun,Xin'an Community, Chang'an Town,DongGuan City，China.

System Function

- **directly connected to the solar panels，Or directly connected to any applicable DC power supply power (including battery)**
  MPPT using precise function, APL functions, solar panels automatically adjust to maximum output power, simply connect directly to the solar panel grid inverters, Or directly connected to any applicable DC power supply power (including battery)
- **AC 0 angle with high precision auto-detection**
  AC phase angle of 0 through isolation amplifier and input to the MCU for high-precision detection and analysis, the phase shift rate of only <1%, thus achieving high-precision AC and combining with the phase modulated output.
- **Synchronous High-frequency Modulation**
  In the course of the grid, usually with the same phase angle and the net (ie, two-phase alternating current total is equal to 0, with the switch to the two AC fusion) and the product is first rectified AC half-frequency AC to 100Hz, Then the machine produces high frequency current in the circuit and semi-100Hz frequency alternating current generated combination, to achieve high-frequency modulation.
- **Pure Sine Wave Output**
  SPWM directly with pure sine wave output.
- **Automatic Sensing Function Solar Luminosity**
  Brightness perception latest computing technology, solar radiation in the solar panel angle for different light intensities produce different current output, using advanced CPU computing the light of their different degrees, can be directly displayed on the LCD , you can visually see the sense of the strength of the sun unit, use more terms.
- **Power Automatically Locked (APL)**
  The current strength of the different fluctuations, we should use the MPPT function, when the MPPT function adjusted to the maximum power point, the product automatically powers locked in maximum power point, the output power is more stable.
- **Maximum Power Point Tracking**（Use battery as power supply the power supply, this function are of no use.）
  Current intensity, voltage constantly changes, if there is no power point tracking, then there will be a lot of problems in the past usually adopted a solar controller, this product uses high-precision MPPT computing power, automatic and immediate to solar panels output power adjustment in the maximum output point, in order to achieve a stable output purposes
- **Automatically Adapt To Different Load Power Factor**
  Adapted to any of the power load.
- **Constant Current, Constant Power**
  This product is constant current, constant output power, without any overload, over-current phenomenon.
- **Automatically Shut Down When The Power Output Of a Fault**
  When the city power system planning power outage there is a failure, the inverter will automatically turn off the output.
- **Current Limit Protection**
  This product is constant current, constant output power, without any overload, over-current phenomenon.
- **Stack Multiple Machines (in the parallel machine used)**
  Multiple machines in parallel can be used to achieve a small power inverter in parallel for the power output.
- **High-Frequency High Conversion Rate**
  High frequency converter, the output more efficient.

Parameter Table（Designed for battery power supply design version）

MGI series models	SY-MGI-1000W
Grid inverter working conditions	The output power lines necessary to have a normal 120V or230V
Recommend use solar panels	18V/1200Wp
DC Maximum Input Power	Automatic control
DC maximum voltage	VpvDC28VDC
DC voltage range	Vpv 10.5V~28VDC
voltage at pmax	28.5VDC
Maximum output power factor	>96%
Maximum input current	Automatic control
AC output power	1000W
AC maximum output power	1050W
Anti-voltage protection	Fuse
AC standard voltage range	120VAC or 230VAC
AC frequency range	50HZ & 60HZ (Automatic detection and conversion)
Output current total harmonic distortion	THDIAC <3%
Phase	<1%
Islanding protection	VAC;f AC
Output short circuit protection	Limiting
Show	LED
Standby Power	<2W
Night Power	<1W
DC TO AC Conversion efficiency	>80%
Ambient temperature range	-25 ℃~80℃（skin temperature）
Temperature protection	>85℃（skin temperature）
Humidity	0~99%(Indoor Type Design)
Waterproof	Indoor Type Design
Electromagnetic Compatibility	EN50081.part1 EN50082.part1
Power System Disturbance	EN61000-3-2 EN62109
Network test	DIN VDE 1026

Packing and Size

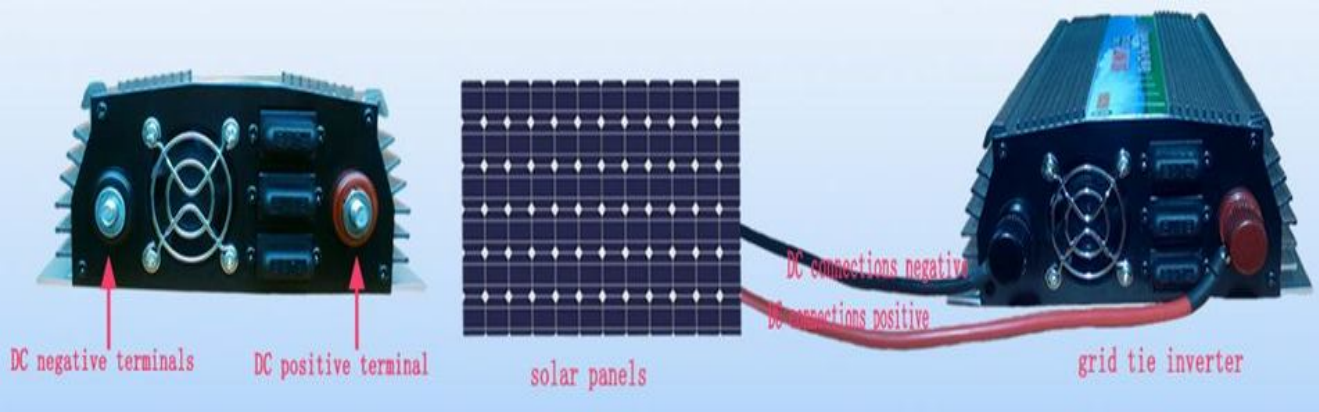
NW	2.0kg
GW	2.7kg
Size (L x W x H)	31 x 16.5 x5.5cm
Package (L x W x H)	Innerbox:43x25x15.5CM carton:52x45x33CM
Installation	Wall hanging
AC power cord length	1.8m
Cooling	Fan
Show	1 Red and 1 Green LED

User Guide

A、Installation Connection(Family using solar power save electricity scheme)

1、Red terminal: Connect DC positive, black terminal: Connect DC negative. Shown in Figure 1.

Figure 1



2、AC socket: Connection to the mains. The AC cord to the inverter 3 foot outlet, then the AC cord to home 3PIN AC outlet. Are shown in Figure 2.

Figure 2

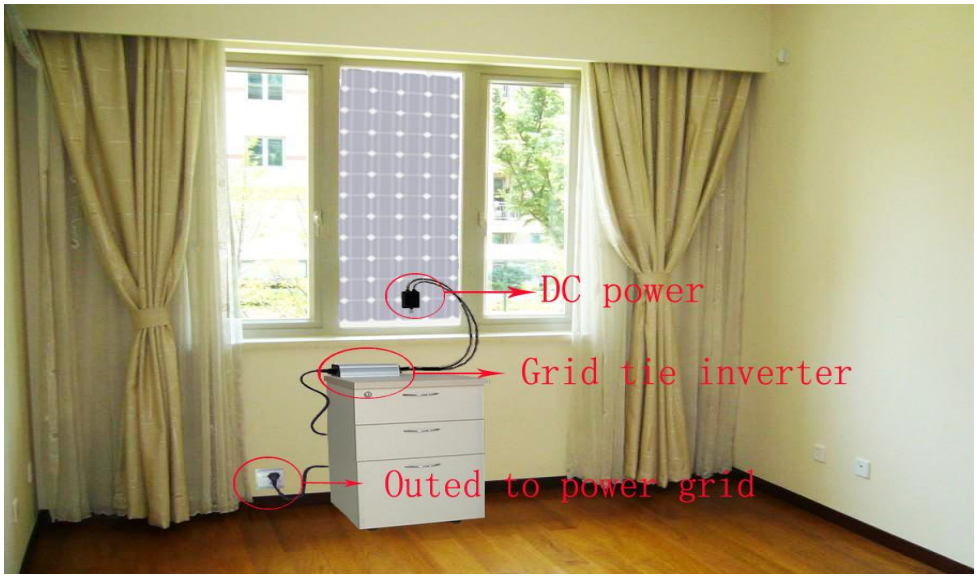


Figure 3

3、Switch: power properly connected, turn on the switch, the inverter to work.

B、Inverter with the beautiful lights of the application:

Use this product, do not need to add a fan controller, solar panel controller, battery.。

Connection Method 1 (Figure 4 below):

This connection method, wind energy, solar energy can supply to the grid at the same time, the highest efficiency.

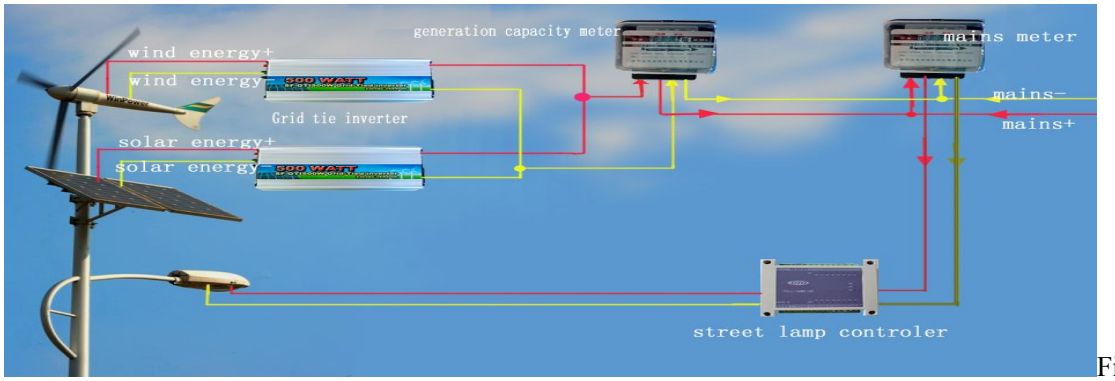


Figure 4

C、Stack using the（The purpose of small power inverter become high-power inverter）

In order to achieve higher power use requirements, the use of this product can be stacked, such as: 5 grid inverter 300W of stack used is equal to 1500W, and the number of open stacks（No Quantitative Restrictions）. Used as shown in Figure 6:

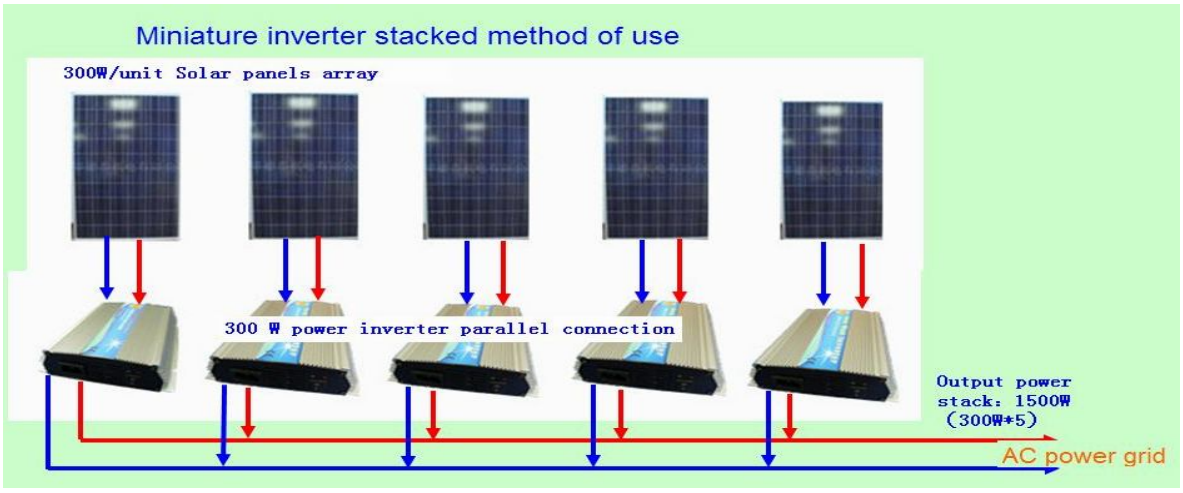
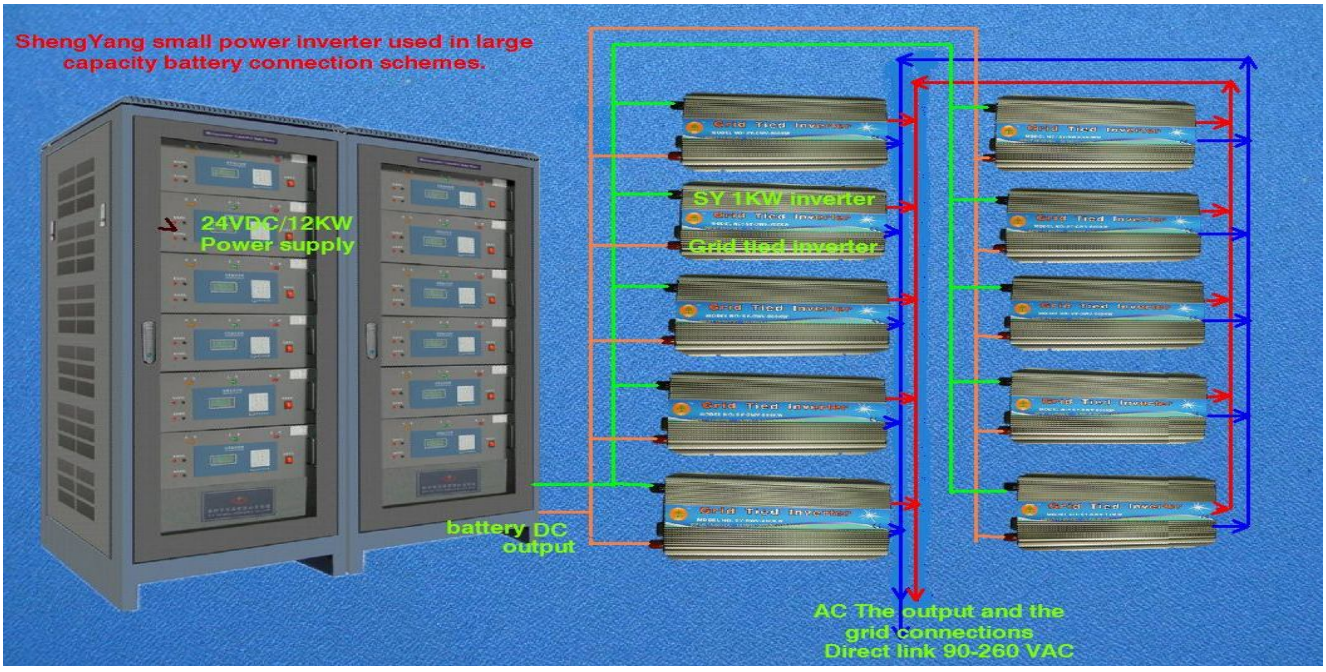
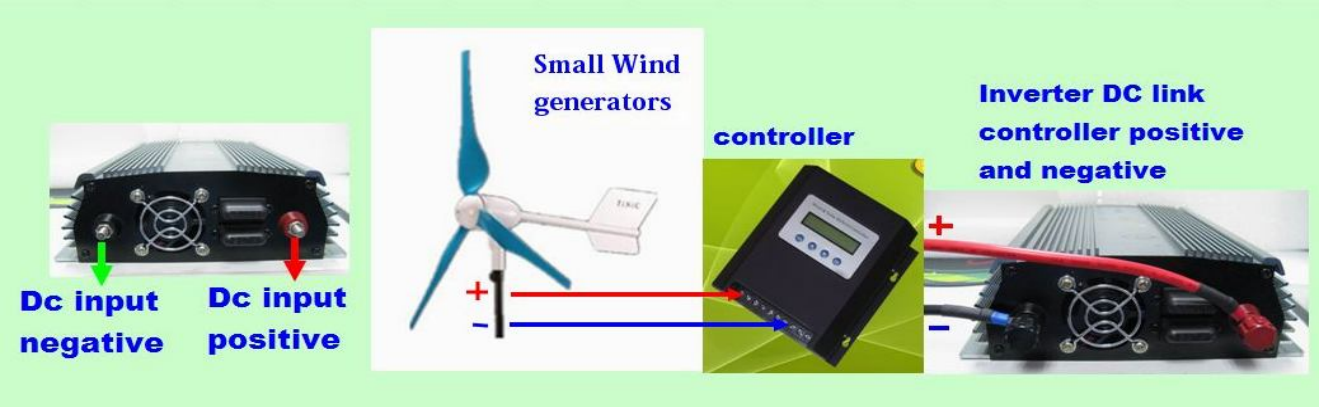


Figure 6

D、The large capacity battery as DC power supply power use scheme


ShengYang small power inverter used in large capacity battery connection schemes.
24VDC/12KW
Power supply
SY 1KW inverter
Grid tied inverter
battery DC output
AC The output and the grid connections
Direct link 90-260 VAC

E. Wind power use scheme



F、Input and output

1、DC input limit

- ✧ Input voltage range: 10.5V to 28V
- ✧ Solar Panel: recommend the use of power greater than 200W, the standard voltage 12V PV panels. Use two pieces of series achieve output voltage 24 V, or 18V PV panels.
- ✧ Recommended, and even solar panels, thread will result in high input voltage inverter which exceeds the working voltage range.
- ✧ Wind turbine: Rated voltage 24VDC, maximum voltage 28VDC.
- ✧ storage battery；Rated voltage 24VDC, maximum voltage 28VDC.

2、AC output：

- ✧ Output 220V AC power inverter can be used in voltage: 190V - 260V, 50/60 Hz
- ✧ Output 110V AC power inverter can be used in voltage range: 90V - 140V, 50/60 Hz

G、LED Indicator：

1、Red LED：

1、Low-voltage protection (input DC voltage is less than 10.5VDC).
2、Overvoltage protection (Input DC voltage is greater than 28VDC).
3、Over-temperature protection (when the chassis temperature is above >80℃, the temperature dropped about 2-10 minutes to restart automatically after cooling).
4、Fault Protection (when 110VAC or 220VAC power outage or shutdown).
5、Islanding protection: electricity disconnected, the inverter automatically shut down output.

2、Green LED：

1、Green LED flashing: are adjusting power output, MPPT is working condition.
2、Long bright green LED: Indicates the maximum inverter output power is in the locked state of work.

Notes

---Non-professionals do not disassemble, Only qualified personnel may repair this product.
---Please inverter installed in the low humidity and well-ventilated place to avoid the inverter overheating, and clear around the inflammable and explosive materials.
---When using this product, avoid touching children, playing, to avoid electric shock.
---Recommended Maximum DC input 5AWG cable capable of handling more than 65A of the cable size.
---Optimal length of the DC input line 1.8M or less, long cable will allow solar panels to the inverter DC voltage drop caused by wear and tear.
---Connected to a power outlet to provide AC.
---Connected solar panels, battery or wind generators DC input DC power supply cable.
---Proposed wind power plant with its own charge controller and load dump.